IN THE DRAWINGS

The attached drawing sheet includes a change to Fig. 2A, which directly follows Fig. 2E. Fig. 2A is amended to be correctly labeled as Fig. 2F. This sheet, which includes Figs. 2D, 2E, and 2F, replaces the original sheet including Figs. 2D, 2E, and 2A.

Attachment: Replacement Sheet

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in view of the present amendment and in light of the following discussion, is respectfully requested.

Claims 14-29 are presently active in this case. The present amendment amends Claims 14-15, 18-24, and 26, and adds Claims 27-29. Support for the present amendment can be found in Figures 1-3, in the specification at page 3, lines 7-14, at page 4, lines 1-12, at page 5, lines 4-11, 14-17, and 22-23, at page 6, lines 25-26, and at page 7, lines 1-5, and 15-20, and in Claims 1-13 as originally filed. Thus, it is respectfully submitted that no new matter is added.

The outstanding Office Action rejected Claims 14-26 under 35 U.S.C. § 102(b) as being anticipated by Brown (U.S. Patent No. 4,224,016).

In response to the rejection of Claims 14-26 under 35 U.S.C. § 102(b), Applicants respectfully request reconsideration of this rejection and traverse the rejection based on the subsequent discussion.

Amended Claim 14, relates to a gear tooth that can be used preferably, but not exclusively, in the gears of gear pumps. The gear tooth, as supported by the original application disclosure in Fig. 1 and in the corresponding description in the specification, has a root including two concave root sectors, with each of the concave root sectors being joined at an origin to a concave root sector of a neighboring tooth. The gear tooth also has a top including a first side and a second side, with each of the sides of the top joined to a respective one of the concave root sectors by a first transition point. Each of the sides of the top includes two convex sectors joined by a second transition point defining a discontinuity in curvature of the tooth profile. The claimed invention also encompasses, as recited in amended Claim 19, gear pumps that utilize gears having teeth in conformity with the tooth recited in amended Claim 14.

As explained in Applicants' specification, for example, at page 3, lines 7-9, a gear having the gear tooth recited in amended Claim 14 can increase the hydraulic performance of gear pumps without harming the continuity of meshing between gear teeth or increasing the space requirement within the pump. The claimed invention thus provides a gear tooth with convex and concave rolling sectors, which together, lead to a gear pump that ensures continuous gear meshing and an increased volume displacement.

Turning to the applied reference, Brown[1] discloses a dual rotor in which each rotor has two lobes or teeth. The outstanding Office Action cites that the rotor teeth of Brown are each comprised of a concave root, joined at its origin to a root of a neighboring tooth, and a top joined to the root by a first transition point, in which the top has two convex sectors joined by a second transition that defines a discontinuity in curvature of the tooth profile.

However, it is respectfully submitted that Brown does not disclose or suggest a gear tooth in which "*each of the sides* of the top includes *two* convex sectors," as amended Claim 14 defines.

Instead, as can be seen in Fig. 1, Brown describes a rotor tooth in which a top comprised of two convex sectors is joined to only one of the concave root sectors of the rotor tooth. Although one concave root sector (the concave area under 14a) is joined to a top comprised of two convex sectors (one convex sector is above 14a and the other convex sector follows the first and ends at 42), the other concave root sector of this rotor tooth (the concave area under 36) is not joined to a top comprised of two convex sectors. The other concave root sector is joined to a top of the rotor tooth that is comprised of one convex sector (the convex area to the right of 36) and one concave sector (the concave area between 36 and 42).

Therefore, the cited reference fails to disclose or suggest every feature recited in Applicants' amended Claim 14, so that amended Claim 14 is patentably distinct over Brown.

[1] See Brown, at Fig. 1.

Accordingly, Applicants respectfully request that the outstanding rejection of Claim 14, and of Claims 15-18 which depend thereon, as anticipated by Brown be withdrawn.

Applicants also respectfully request that the outstanding rejection of Claims 19-26 as anticipated by Brown be withdrawn, because the gear pump in amended Claim 19 has gears wherein each tooth of the gears has a top in which "*each of the sides* of the top includes *two* convex sectors," and Claims 20-26 all depend from amended Claim 19.

Further support exists for the patentability of dependent Claims 23-26 in addition to the previous argument advanced. Amended Claim 23 is patentable because the specification of Brown[2] indicates that rotors with lobes of the variety disclosed have lobe tips that *sweep* in sealing proximity across the concave face of a lobe, instead of *rolling* over it. Amended Claim 23 specifically states that "an end sector of one tooth *rolls* between two teeth of an opposite meshed gear," and thus, Brown does not disclose or suggest this claim feature.

Amended Claim 24 is further patentable because Fig. 1 of Brown suggests that there is at least one point in the rotation of the rotors, directly before the point in time depicted in Fig. 1 when the two lobes will be in contact at only one point. Brown therefore does not disclose or suggest the claim feature that "the teeth in mesh have at all times at least one primary bearing point and one secondary contact point," as recited in Claim 24.

Claim 25 is further patentable as the sweeping movement of the lobe tip in Brown over the concave face of a lobe indicates that the tip and points on the concave face are active points of a tooth, but that accordingly, they cannot be points that are "successively a primary bearing point and a secondary contact point in the course of meshing." For this reason, Brown does not disclose or suggest all the features of Claim 25.

Lastly, amended Claim 26 is further patentable on the basis that Fig. 1 of Brown shows that the meshed lobes are only in contact over a single pitch of the rotors. Given that

[2] See Brown, at col. 3, lines 65-66.

amended Claim 26 recites that "the teeth of two meshed gears are in contact over more than one pitch," Brown does not disclose all the features of amended Claim 26.

Accordingly, because the teeth in Brown do not have the claimed contact patterns, they do not have the claimed structure. In consideration of these additional reasons, Applicants respectfully request that the outstanding rejection of Claims 23-26 be withdrawn.

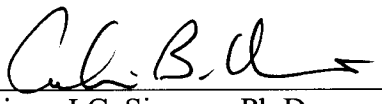
In order to vary the scope of protection recited in the claims, new Claims 27-29 are added. These three new claims are directly supported in Applicants' specification, for example, at page 5, line 4, which states that the gear tooth in the illustrated embodiment is symmetric. Thus, it is respectfully submitted that no new matter is added, and as Claim 27 depends from amended Claim 14, and Claims 28 and 29 depend from amended Claim 19, these claims are allowable for the reason advanced above. Further, as can be seen in Figs. 1-6 of Brown, the teeth described therein are not symmetric. Accordingly, claims 27-29 are believed to further patentably define over the cited reference.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. A Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Philippe J.C. Signore, Ph.D.
Attorney of Record
Registration No. 43,922

Colin B. Harris
Registration No. 58,969

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/09)